

## **REMARKS**

### **I. Introduction**

With the cancellation herein without prejudice of claim 24 and the addition of new claims 35 to 38, claims 18 to 23 and 25 to 38 are pending in the present application. In view of the foregoing amendments and the following remarks, it is respectfully submitted that all of the presently pending claims are allowable, and reconsideration is respectfully requested.

Applicants note with appreciation the acknowledgment of the claim for foreign priority and the indication that all copies of the certified copies of the priority documents have been received from the International Bureau.

### **II. Information Disclosure Statement**

Regarding the Information Disclosure Statement filed on June 12, 2006, it appears that the Examiner has not considered the Patent Abstracts of Japan document listed on page 2 of the PTO-1449 paper submitted with the Information Disclosure Statement. However, as indicated in the International Search Report (also cited in the Information Disclosure Statement filed on June 12, 2006), the Patent Abstracts of Japan document corresponds to Japanese Patent Document No. 2003-227735 and U.S. Patent Application Publication No. 2004/0036017, both of which were cited in the Information Disclosure Statement and both of which were indicated to have been considered. Furthermore, a copy of the Patent Abstracts of Japan document was filed on June 12, 2006 as evidenced by the Image Filewrapper for the present application in the Office's PAIR system:

For the Examiner's convenience, an image of the Patent Abstracts of Japan document in question as obtained from the Office's PAIR system is reproduced below:

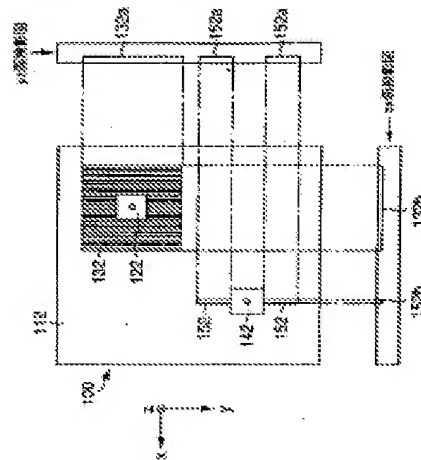


## EUROPEAN PATENT OFFICE

CLASS. EPO

### Patent Abstracts of Japan

PUBLICATION NUMBER : 2003277735  
PUBLICATION DATE : 12-08-03  
  
APPLICATION DATE : 31-01-02  
APPLICATION NUMBER : 2002024482  
  
APPLICANT : OLYMPUS OPTICAL CO. LTD.  
  
INVENTOR : ITO TAKESHI  
  
INT. CL. : G01D 5/36 G01B 11/00 G01D 5/30  
NOYL 31/12  
  
TITLE : OPTICAL ENCODER AND ITS SENSOR  
HEAD



ABSTRACT : PROBLEM TO BE SOLVED: To provide a sensor head capable of being applied to both two types of typical scales generally used for optical encoders.

SOLUTION: The sensor head 100 is provided with a light source 132 for detecting the amount of movement and for irradiating a pattern for detecting the amount of movement of a scale with a coherent light beam, a light source 142 for detecting a reference location and for irradiating the pattern for detecting the reference location of the scale with a light beam, an optical detector 132 for detecting the amount of movement and for detecting light reflected at the pattern 12 for detecting the amount of movement, a pair of optical detectors 152 for detecting the reference location and for detecting light reflected at a pattern 14 for detecting the reference location, and a flat-plate-shaped substrate 112 for supporting these elements. In the optical detector 132 for detecting the amount of movement and the optical detectors 152 for detecting the reference location, a yz plane projected image 132a and yz plane projected images 152a are separated from one another, and a yz plane projected image 132b and a yz plane projected image 152b are separated from each other.

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In view of the foregoing, consideration of the Patent Abstracts of Japan document is respectfully requested.

### III. Objections to the Specification

Regarding the objections to the Specification, the Examiner will note that the Specification has been amended herein as suggested in the Office Action. No new matter has been added. In view of the foregoing, withdrawal of these objections is respectfully requested.

### IV. Rejection of Claims 19 to 25 Under 35 U.S.C. § 112

Claims 19 to 25 were rejected under 35 U.S.C. § 112, second paragraph as allegedly indefinite. It is respectfully submitted that claims 19 to 25 satisfy the definiteness requirement of 35 U.S.C. § 112 for at least the following reasons.

Regarding claim 19, the Office Action reflects an apparent misapprehension of this claim. According to the Office Action, recitation of “the p-layer” in the phrase “one of (a) the first doped layer and (b) the p-layer” seems to imply that “the first doped layer” has to be “the n-layer” and recitation of “the n-layer” in the phrase “one of (a) the second doped layer and (b) the n-layer” seems to imply that “the second doped layer” has to be “the p-layer.” However, claim 18, from which claim 19 depends, recites that “photosensitive areas have in common a first of the two doped layers and at least a part of the intrinsic layer and are electrically separated from one another by interruptions of a second of the two doped layers.” Thus, claim 19 sufficiently sets forth and circumscribes a particular subject matter with a reasonable degree of clarity and particularity, which is all that is required for compliance with the definiteness requirement of 35 U.S.C. § 112.

Regarding claim 24, the Examiner will note that claim 24 has been canceled herein without prejudice, thereby rendering moot the present rejection with respect to claim 24. Nevertheless, claim 18 has been amended herein without prejudice to recite that “a shape of the receiving grating is approximately elliptical having a major axis perpendicular to a measuring direction of the position-measuring system.” As such, it is believed and respectfully submitted that claim 18 is sufficiently definite.

In view of the foregoing, withdrawal of this rejection is respectfully requested.

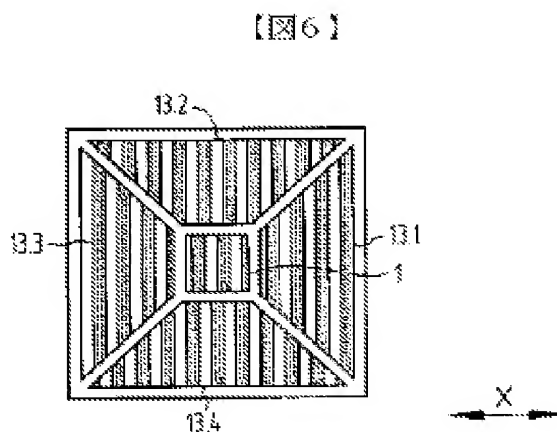
#### **V. Rejection of Claims 18 to 20, 30, and 31 Under 35 U.S.C. § 102(b)**

Claims 18 to 20, 30, and 31 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 4,885,622 (“Uchiyama et al.”). It is respectfully submitted that Uchiyama et al. does not anticipate claims 18 to 20, 30, and 31 for at least the following reasons.

As an initial matter, and as indicated above, claim 18 has been amended herein without prejudice to recite that “a shape of the receiving grating is approximately elliptical having a major axis perpendicular to a measuring direction of the position-measuring system.” Support for this amendment may be found, for example, in claim 24 as well as Figure 2d. Since claim 24 was not rejected as anticipated by Uchiyama et al., it is implicit that the Office Action considers the

subject matter of amended claim 18 to be lacking in the disclosure of Uchiyama et al. Hence, claim 18 should not be considered anticipated by Uchiyama et al.

Regarding the features of claim 24, the Office Action considers Japanese Published Patent Document No. 7-146160 ("Holzapfel et al.") to disclose in Figure 6 that a shape of a receiving grating approximates an ellipse having a greater diameter perpendicular to a measuring direction. Figure 6 of Holzapfel et al. is reproduced below:



From the foregoing figure, it is not apparent how or why scanning gratings 13.1 to 13.4 are considered to approximate an ellipse having a greater diameter perpendicular to a measuring direction. In any event, the arrangement shown in Figure 6 of Holzapfel et al. fails to disclose, or even suggest, that a shape of a receiving grating is approximately elliptical having a major axis perpendicular to a measuring direction of a position-measuring system as now recited in claim 18.

The Office Action's reliance on the decision of In re Rose, 105 U.S.P.Q. 237 (C.C.P.A. 1955), is entirely misplaced. According to the In re Rose decision, claims directed to a lumber package "of appreciable size and weight requiring handling by a lift truck" were found unpatentable over prior art lumber packages that could be lifted by hand. Thus, the decision of In re Rose is entirely irrelevant to the patentability of the present claims.

In summary, it is respectfully submitted that Uchiyama et al., whether taken alone or in combination with Holzapfel et al., fails to disclose, or even suggest, all of the features included in claim 18. As such, it is respectfully submitted that

Uchiyama et al. does not anticipate claim 18 and that the combination of Uchiyama et al. and Holzapfel et al. fails to render unpatentable claim 18.

As for claims 19, 20, 30, and 31, which ultimately depend from claim 18 and therefore include all of the features included in claim 18, it is respectfully submitted that these claims are patentable over Uchiyama et al. and are unpatentable over the combination of Uchiyama et al. and Holzapfel et al. for at least the reasons more fully set forth above in support of the patentability of claim 18.

In view of all of the foregoing, withdrawal of this rejection is respectfully requested.

**VI. Rejection of Claims 21 to 29 Under 35 U.S.C. § 103(a)**

Claims 21 to 29 were rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of Uchiyama et al. and Holzapfel et al. It is respectfully submitted that the combination of Uchiyama et al. and Holzapfel et al. does not render unpatentable the present claims for at least the following reasons.

As an initial matter, and as indicated above, claim 24 has been canceled herein without prejudice, thereby rendering moot the present rejection with respect to claim 24. As further set forth above, the combination of Uchiyama et al. and Holzapfel et al. fails to disclose, or even suggest, at least the feature that a shape of a receiving grating is approximately elliptical having a major axis perpendicular to a measuring direction of a position-measuring system as now recited in claim 18. Since claims 21 to 23 and 25 to 29 ultimately depend from claim 18 and therefore include all of the features included in claim 18, it is respectfully submitted that the combination of Uchiyama et al. and Holzapfel et al. does not render unpatentable these dependent claims for at least the reasons more fully set forth above in support of the patentability of claim 18.

In view of all of the foregoing, withdrawal of this rejection is respectfully requested.

**VII. Rejection of Claims 32 to 34 Under 35 U.S.C. § 103(a)**

Claims 32 to 34 were rejected under 35 U.S.C. § 103(a) as unpatentable over Uchiyama et al. It is respectfully submitted that Uchiyama et al. does not anticipate the present claims for at least the following reasons.

Claims 32 to 34 ultimately depend from claim 18 and therefore include all of the features included in claim 18. As more fully set forth above, Uchiyama et al., whether taken alone or in combination with Holzapfel et al., does not disclose, or even suggest, all of the features included in claim 18. The contentions included in the Office Action, which are not agreed with, do not cure the critical deficiencies noted above. Accordingly, it is respectfully submitted that neither Uchiyama et al. nor the combination of Uchiyama et al. and Holzapfel et al. renders unpatentable these dependent claims for at least the reasons more fully set forth above in support of the patentability of claim 18.

In view of all of the foregoing, withdrawal of this rejection is respectfully requested.

#### **VIII. New Claims 35 to 38**

New claims 35 to 38 have been added herein. It is respectfully submitted that claims 35 to 38 add no new matter and are fully supported by the present application, including the Specification. Since claim 35 to 38 ultimately depend from claim 18, it is respectfully submitted that claims 35 to 38 are patentable over the references relied upon for at least the reasons more fully set forth above in support of the patentability of claim 18.

#### **IX. Conclusion**

It is therefore respectfully submitted that all of the presently pending claims are allowable. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

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